

Customer No.: 31561
Application No.: 10/708,212
Docket No.: 11987-US-PA

REMARKS

Applicants would like to elect Group I, claims 1-3 and 8, which are drawn to an apparatus comprising utilizing a change of duty cycle for controlling a low noise of LEDs, classified in class 315, subclass 247, while the rest claims are retained in "withdrawn" status.

Nevertheless, the withdrawal of this restriction requirement is respectfully requested based on the following arguments.

1. The claims 4 was amended due to a clerical error and the claim 5 was un-amended so that their substantially techniques are not changed at all. Evidently, during the searching prior art references of these claims, it is supposed not to increase the examiner's working load so that it is deemed inappropriate that these claims are separately grouped.
2. The reason why the examiner required restriction is that a change of duty cycle of the illumination control pulse signal (i.e. referred as pulse-width-modulation signal, PWM) as claimed in the claims 1-3 and 8 (i.e. GROUP I), a change of frequency of PWM as claimed in the claims 4, 5 and 8 (i.e. GROUP II) as well as a change of phase shift of PWM as claimed in the claims 7 and 8 (i.e. GROUP III), are distinct inventions. However, from Figs 4 and 5, there obviously shown once there exists a change in a phase width in each cycle either widening or narrowing the phase width, there incurs changes of duty cycle, frequency and phase shift at the same time. In other words, the change of the duty cycle, the frequency and the phase shift are highly correlated. Accordingly, unity exists between the claims 1-3 and 8 (i.e. GROUP I), the claims 4, 5

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and 8 (i.e. GROUP II) as well as the claims 7 and 8 (i.e. GROUP III) because GROUP I, II and III belong one invention. Furthermore, as is well known in electronic circuit, the phase shift is defined as:

$\Delta \phi = 2\pi \Delta f \Delta t \dots (1)$, wherein $\Delta \phi$ and Δf are referred as the changes of the phase shift and the frequency, respectively, and Δt is referred as the change of aforementioned the phase width by which the duty cycle can be modulated. Therefore, from the equation (1), evidently, any change of one variable (i.e. one of $\Delta \phi$, Δf and Δt) should incur other changes of the other two variables. That is, the GROUP I, II and III contain their special technical features, i.e. changes of the duty cycle, the frequency and the phase shift, respectively, and there exist a technical relationship between these changes (i.e. equation(1)). Thus, there exists unity between the GROUP I, II and III.

3. As to the examiner's allegation that the subcombination I is not required in subcombination II and III such as the subcombination I does not require signal have a frequency or phase shift varied with time as claimed in subcombination II and III, and that GROUP I, II and III are distinct inventions, actually, as stated above, any change in duty cycle of a PWM signal can inherently incur a change in either the frequency or the phase shift of the PWM signal. Therefore, the GROUP I, II and III should not be regarded as distinct inventions, but as non-distinct inventions. Moreover, actually, changes of the duty cycle, the frequency and the phase shift of PWM signal are its electrical characteristics that are deemed as technical features as claimed in claims 1-5 and 7-8, but not claimed subject matters as alleged by the examiner. However, in a device (or circuit) claim of the present invention, its subcombination should be any

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element that constitutes this device such as a DC/DC converter, etc, rather than electrical characteristics of the PWM signal. Accordingly, the grouping of the claims 1-5 and 7-8 in accordance with electrical characteristics of the PWM as required by the examiner is deemed inappropriate. As a result, the withdrawal of this restriction requirement is respectfully requested.

Respectfully submitted,

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Belinda Lee

Registration No.: 46,863

Jianq Chyun Intellectual Property Office
7th Floor-1, No. 100
Roosevelt Road, Section 2
Taipei, 100
Taiwan
Tel: 011-886-2-2369-2800
Fax: 011-886-2-2369-7233
Email:belinda@jcipgroup.com.tw,usa@jcipgroup.com.tw